vomiting (25%), and fatigue (23%). Most AEs were Grade (G) 1-2. The G3 treatment-related AEs were rash (6 pts), fatigue (1 pt), decreased appetite (1 pt), dehydration (1 pt), pruritus (1 pt), and face edema (1 pt). In particular, no G3 treatment-related gastrointestinal toxicity or liver enzyme elevation has been reported. To date, 24 ALK+ NSCLC pts treated at doses $\geq$ 200 mg are evaluable for response; partial response (PR) was achieved in 16 pts (67%) and stable disease (SD) in 3 pts (13%). In the crizotinib-naïve pts (n=8), responses were observed in 6 pts (75%) and SD in 1 pt (13%). In the 12 pts with prior crizotinib but no other ALK TKI, 10 pts (83%) achieved PR and 1 (8%) SD. CNS responses have been observed in both crizotinib naïve and crizotinib resistant pts. The median duration of treatment in the 24 evaluable ALK+ pts is 23.8+ weeks, with the longest being 112+ weeks.

Conclusion: X-396 is well-tolerated and induces responses in both crizotinib-naïve and crizotinib-resistant ALK+ NSCLC pts, as well as patients with CNS lesions. Enrollment is ongoing in the expansion cohorts.

Liquid biopsies could be superior to tumor biopsy to provide a molecular profile in non-small cell lung cancer (NSCLC) patients

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Introduction: Approximately 30% of patients with an adenocarcinoma have a druggable driver mutation. However, the access to tumor tissue to perform the molecular profile is often limited. Circulating tumor DNA (ctDNA) can be used for detection and quantification of molecular abnormalities as a non-invasive tool. We performed a retrospective study to assess the concordance in molecular alterations between tissue biopsies and ctDNA in 20 NSCLC patients as well as the impact of treatment on ctDNA profile.

Methods: Plasma samples were collected from 17 consecutive treatment-naïve and 3 pre-treated advanced NSCLC patients from Gustave Roussy. For 10 patients a second blood sample was collected 21 days after starting chemotherapy to monitor the mutational profile. DNA was extracted from $<$ 3 ml plasma and analyzed using the enhanced Tam-SeqTM assay covering regions from 35 genes. TAM-Seq data (generated using Illumina sequencing) were compared to a different NGS platform (Ion-torrent) as well as Sanger sequencing data from tissue biopsy samples analyzed in routine daily clinical practice.

Results: From May 2015 to June 2015, 20 patients were included (70% were male, 15% never-smoker, 75% had an adenocarcinoma subtype, and 70% a stage IV). Only 40% of tumor biopsies provided sufficient sample tissue for molecular analysis. ctDNA profiling was possible for all patients, which detected cancer mutations in 19 out of 20 patients. Median number of mutations in plasma was 2, predominantly located in KRAS, TP53 and EGFR mutation. Half of the mutations detected in ctDNA were observed at a frequency lower than 1%. In 10 NSCLC patients dynamic ctDNA changes after 21 days of treatment were evaluated. No new mutations were detected at day 21. Seven out of 10 patients experienced a partial response in CT scan by RECIST criteria. All of them had either a lower frequency of mutations or undetectable levels of mutations at day 21.

Conclusions: ctDNA can be used as a 'liquid biopsy' for molecular profiling of mutations in NSCLC patients in the absence of an invasive biopsy with a high concordance with tissue genomic profile. Also, ctDNA can potentially be used as a surrogate marker of response. Update in 35 patients will be presented during the conference.

The triptolide derivative MRx102 inhibits Wnt pathway activation and has potent anti-tumor effects in lung cancer

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Lung cancer is the leading cause of cancer-related deaths globally. Despite advances in treatment with targeted therapies and earlier detection, the 5-year survival rate remains a dismal 15%. Due to the low survival rate, there is a critical need for new therapies targeting lung cancer. Most lung cancers have increased activation of Wnt signaling and/or Wnt protein expression, which makes Wnt a strong potential target for the development of new lung cancer therapeutics. Triptolide is a natural compound isolated from the Thunder God Vine, *Tripterygium wilfordii*, which has been used in traditional Chinese medicine to treat autoimmune disorders and inflammation. We previously showed that triptolide increases WIF1 expression by decreasing WIF1 promoter methylation, thereby inhibiting the Wnt pathway. Though triptolide